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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,345	09/28/2000	David I. Poisner	10559/364001/P8247-2	7729

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EXAMINER

KIM, HONG CHONG

ART UNIT	PAPER NUMBER
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2186

DATE MAILED: 02/17/2004

19

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/672,345

Applicant(s)

POISNER, DAVID I.

Examiner

Hong C Kim

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 34-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Detailed Action

1. Claims 34-50 are presented for examination. Claims 1-33 has been canceled by the amendment. This office action is in response to the RCE filed on 12/29/03.

Claim Rejections - 35 USC 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 34-40 and 43-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie, Jr. et al. (Dinwiddie) US Patent 4,371,932 in view of Gibson et al. (Gibson) US Patent 6,680,908.

As to claim 34, Dinwiddie discloses a data processing system, comprising: a processor (Fig. 1 Ref. 11 or 1); a main memory (Fig. 1 Ref 22 or 7 or 15);

a multi-ported memory (Fig. 1 Ref. 25, 27, and 30, bi-directional arrows on both sides reads on this limitation, col. 14 lines 60-63) in communication with the processor and the main memory; and wherein the system is configured to receive a request to write information to a memory location, wherein the information has an information type equal to data (Col. 5 lines 1-10 and 48-49) or control information (Fig. 1 addr bus & command register, Ref. 25 and col. 14 lines 47-63), and wherein the system is further configured to determine a memory destination between the main memory (col. 5 lines 1-3) or the multi-ported memory based on the information type (separate address and control registers Refs. 25 and 30 and data memory Ref. 22 reads on this limitation, since address and control are directed to registers Refs. 25 and 30 while data is directed to memory 22). However, Dinwiddie does not specifically disclose a storage capacity of about 4 kilobytes or greater.

Gibson discloses a storage capacity of about 4 kilobytes or greater (col. 6 lines 12-15) for the purpose of providing adequate space for the system thereby prevent system slow down or crash.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate a storage capacity of about 4 kilobytes or greater as shown in Gibson into the invention of Dinwiddie for the advantages stated above.

As to claims 45 and 48, the claims 45 and 48 encompass the same scope of the invention as that of the claim 34. Therefore, the claims 45 and 48 are is rejected for the same reason as the claim 34.

As to claim 35, Dinwiddie and Gibson disclose the invention as claimed above. Dinwiddie further discloses an operating system configured to determine the memory destination based on the information type (separate bus and register for address, control and data read on this limitation).

As to claim 36, Dinwiddie and Gibson disclose the invention as claimed above. Dinwiddie further discloses the system further includes: peripheral device (Fig. 1 Ref. 3); and peripheral device controller (Fig. 1), wherein the controller is configured to determine the memory destination based on the information type (separate bus and register for address, control and data read on this limitation).

As to claim 37, Dinwiddie and Gibson disclose the invention as claimed above. Dinwiddie further discloses the multi-ported memory is included in a memory controller (Fig. 1 Ref. 2)

As to claim 38, Dinwiddie and Gibson disclose the invention as claimed above. Dinwiddie further discloses the multi-ported memory is dual-ported (Fig. 1 Ref. 25 and col. 14 lines 60-63)

As to claim 39, Dinwiddie and Gibson disclose the invention as claimed above. Dinwiddie further discloses the multi-ported memory and memory controller are integrated into a single chip (Fig. 1).

As to claim 40, Dinwiddie and Gibson disclose the invention as claimed above. Dinwiddie further discloses the multi-ported memory includes memory chosen from the group consisting of static random access memory and dynamic random access memory (col. 14 line 60, Register reads on this limitation).

As to claim 43, Dinwiddie and Gibson disclose the invention as claimed above. Dinwiddie further discloses a memory controller (Fig. 1) in communication with the main memory and the multi-ported memory; and a peripheral device (Fig. 1 Ref. 3) in communication with the memory controller via an input/output bus (Fig. 1 Ref. 16).

As to claim 44, Dinwiddie and Gibson disclose the invention as claimed above. Dinwiddie further discloses information with an information type equal to control information, the system is configured to determine the memory destination to be the

multi-ported memory and not the main memory (separate address and control registers Refs. 25 and 30 and data memory Ref. 22 reads on this limitation, since address and control are directed to registers Refs. 25 and 30 while corresponding data is directed to memory 22).

As to claims 46 and 49, Dinwiddie and Gibson disclose the invention as claimed above. Dinwiddie further discloses writing the information to the memory destination based on the determining the memory destination (separate address and control registers Refs. 25 and 30 and data memory Ref. 22 reads on this limitation, since address and control are directed to registers Refs. 25 and 30 while corresponding data is directed to memory 22).

As to claims 47 and 50, Dinwiddie and Gibson disclose the invention as claimed above. Dinwiddie further discloses determining the memory destination between the main memory and the multi-ported memory based on the information type comprises determining the memory destination to be the multi-ported memory for the information type equal to control information (separate address and control registers Refs. 25 and 30 and data memory Ref. 22 reads on this limitation, since address and control are directed to registers Refs. 25 and 30 while corresponding data is directed to memory 22).

4. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie, Jr. et al. (Dinwiddie) US Patent 4,371,932 in view of Gibson et al. (Gibson) US Patent 6,680,908 and further in view of McMahon et al (McMahon) US Patent 5,784,699.

As to claim 41, Dinwiddie and Gibson disclose the invention as claimed above. However, neither Dinwiddie nor Gibson specifically discloses reservation bits mapped to block of general purpose memory in the multiported memory. McMahon discloses reservation bits mapped to block of general purpose memory in the multiported memory (Fig. 3A) for the purpose of providing fast search and allocation/deallocation of availability of a block (col. 3 lines 7-26).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate reservation bits mapped to block of general purpose memory in the multiported memory as shown in McMahon into the combined invention of Dinwiddie and Gibson because it would provide fast search and allocation/deallocation of availability of a block.

5. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie, Jr. et al. (Dinwiddie) US Patent 4,371,932 in view of Gibson et al. (Gibson) US Patent 6,680,908 and further in view of Young et al (Young) US Patent 5,546,554.

As to claim 42, Dinwiddie and Gibson disclose the invention as claimed above. However, neither Dinwiddie nor Gibson specifically discloses virtual addresses within

multiported are mapped to physical address with smart addressing. Young discloses virtual addresses within multiported are mapped to physical address with smart addressing (Fig. 5a) for the purpose of memory that appears to an application to be larger and more uniform than it is.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate virtual addresses within multiported are mapped to physical address with smart addressing as shown in Young into the combined invention of Dinwiddie and Gibson because it would provide capability of memory that appears to an application to be larger and more uniform than it is.

Response to Amendment

6. Applicant's arguments filed on 12/29/03 have been fully considered but they are not persuasive.

Applicant's argument that the reference does not disclose a storage size is not considered persuasive.

Gibson discloses a storage capacity of about 4 kilobytes or greater (col. 6 lines 12-15) for the purpose of providing adequate storage space for the system thereby preventing system slow down or crash.

Applicant's argument that the reference does not disclose determining a memory destination is not considered persuasive.

Dinwiddie discloses determining a memory destination (separate address and control registers Refs. 25 and 30 and data memory Ref. 22 reads on this limitation, since address and control are directed to registers Refs. 25 and 30 while corresponding data is directed to memory 22). In other words, status and control signals are routed to command reg file, Ref. 25 and Handshake, Interrupt, and Misc Controls, Ref. 30 while corresponding data is routed to Storage, Ref. 22.

Also the main memory normally contains all kind of data for storage purposes, however during a program execution corresponding control/status signals are routed to registers for execution of the program. Therefore broadly written claims are disclosed by the references cited.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached PTO-892

8. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) days from the mail date of this letter. Failure to respond within the period for response will result in **ABANDONMENT** of the application (see 35 USC 133, MPEP 710.02, 710.02(b)).

9. Applicants are requested to number each line of each claim starting with line number one to provide easier communication in the future.

10. When responding to the office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections. See 37 C.F.R. ' 1.111(c).

11. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

12. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Hong Kim whose telephone number is (703) 305-3835. The Examiner can normally be reached on the weekdays from 8:30 AM to 5:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Matt Kim, can be reached on (703) 305-3821.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

13. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to TC-2100:
703-872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121
Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).



HK
Primary Patent Examiner
February 12, 2004